

AMENDMENTS TO THE CLAIMS

Please amend claims 1 and 12, and add new claims 21-24, such that the status of the claims is as follows:

1.(Currently amended) A rotary actuator system comprising:

an actuator block;

a mounting block including a mounting arm having a distal end connected to a transducer; and

a linkage arm comprising:

a drive link having a first end and a second end, the drive link being pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end; and

a guide link spaced apart from the drive link, the guide link having a first end and a second end, the guide link being pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end, wherein the mounting arm extends in a direction generally perpendicular to a line passing through the second end of the drive link and the second end of the guide link.

2. (Previously presented) The rotary actuator system of claim 1 in which the drive link is a rigid link.

3. (Previously presented) The rotary actuator system of claim 1 in which the guide link is a rigid link.

4. (Original) The rotary actuator system of claim 1 in which the guide link is a flexible link.

5. (Original) The rotary actuator system of claim 1 in which the drive link and the guide link move in a common plane.

6. (Original) The rotary actuator system of claim 1 in which a length of the drive link is equal to a length of the guide link.

7. (Original) The rotary actuator system of claim 1 in which a length of the drive link is different from a length of the guide link.

8. (Original) The rotary actuator system of claim 1 further comprising a ball bearing joint at a pivotal connection between the first end of the drive link and the actuator block.

9. (Previously presented) The rotary actuator system of claim 8 further comprising:

a ball bearing joint at a connection between the second end of the drive link and the mounting block;

a ball bearing joint at a connection between the first end of the guide link and the actuator block; and

a ball bearing joint at a connection between the second end of the guide link and the mounting block.

10. (Previously presented) The rotary actuator system of claim 8 further comprising:

a torsion spring at a connection between the second end of the drive link and the mounting block;

a torsion spring at a connection between the first end of the guide link and the actuator block; and

a torsion spring at a connection between the second end of the guide link and the mounting block.

11. (Previously presented) The rotary actuator system of claim 8 further comprising:

a hinge at a connection between the second end of the drive link and the mounting block;
a hinge at a connection between the first end of the guide link and the actuator block; and
a hinge at a connection between the second end of the guide link and the mounting block.

12. (Currently amended) A rotary actuator system comprising:

an actuator block;
a mounting block including a mounting arm having a distal end connected to a transducer;
a linkage arm comprising a plurality of generally parallel links, each link having a first end and a second end, each link pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end, wherein the mounting arm extends in a direction generally perpendicular to a line passing through the second ends of at least two of the generally parallel links; and
an actuator motor, operatively connected to one of the plurality of generally parallel links for rotating the one of the plurality of generally parallel links at the first end, the rotation relative to the actuator block.

13. (Previously presented) The rotary actuator system of claim 12 in which the plurality of generally parallel links comprises two links of the same length.

14. (Previously presented) The rotary actuator system of claim 12 in which the plurality of generally parallel links comprises two links of different length.

15. (Previously presented) The rotary actuator system of claim 12 further comprising a ball bearing joint at each of the pivotal connections between the first ends of each link and the actuator block and the second ends of each link and the mounting block.

16. (Previously presented) The rotary actuator system of claim 12 in which the plurality of generally parallel links comprises a first link and a second link, the system further comprising a ball bearing joint at the pivotal connection between the first end of the first link and the actuator block.

17. (Previously presented) The rotary actuator system of claim 16 further comprising:

- a torsion spring at the pivotal connection between the second end of the first link and the mounting block;
- a torsion spring at the pivotal connection between the first end of the second link and the actuator block; and
- a torsion spring at the pivotal connection between the second end of the second link and the mounting block.

18. (Previously presented) The rotary actuator system of claim 16 further comprising:

- a hinge at the pivotal connection between the second end of the first link and the mounting block;
- a hinge at the pivotal connection between the first end of the second link and the actuator block; and
- a hinge at the pivotal connection between the second end of the second link and the mounting block.

19. (Previously presented) A rotary actuator system comprising:

an actuator block;

a mounting block; and

a linkage arm comprising:

a first link, having a first end and a second end, the first end being pivotally connected to the actuator block, and the second end being pivotally connected to the mounting block; and

a second link being generally parallel to the first link, the second link being a spring, the second link having a first end and a second end, the first end being connected to the actuator block, and the second end being connected to the mounting block.

20. (Original) The rotary actuator system of claim 19 further comprising:

a ball bearing joint at the pivotal connection between the first end of the first link and the actuator block.

21. (New) A rotary actuator system comprising:

an actuator block;

a mounting block; and

a linkage arm comprising:

a drive link having a first end and a second end, the drive link being pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end; and

a guide link spaced apart from the drive link, the guide link having a first end and a second end, the guide link being pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the

second end, wherein a length of the drive link is different from a length of the guide link.

22. (New) A rotary actuator system comprising:
- an actuator block;
 - a mounting block;
 - a linkage arm comprising:
 - a drive link having a first end and a second end, the drive link being pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end; and
 - a guide link spaced apart from the drive link, the guide link having a first end and a second end, the guide link being pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end;
 - a ball bearing joint at a pivotal connection between the first end of the drive link and the actuator block;
 - a torsion spring at a connection between the second end of the drive link and the mounting block;
 - a torsion spring at a connection between the first end of the guide link and the actuator block; and
 - a torsion spring at a connection between the second end of the guide link and the mounting block.

23. (New) A rotary actuator system comprising:
- an actuator block;

a mounting block;
a linkage arm comprising a plurality of generally parallel links, each link having a first end and a second end, each link pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end, wherein the plurality of generally parallel links comprises two links of different length; and
an actuator motor, operatively connected to one of the plurality of generally parallel links for rotating the one of the plurality of generally parallel links at the first end, the rotation relative to the actuator block.

24. (New) A rotary actuator system comprising:
an actuator block;
a mounting block;
a linkage arm comprising a plurality of generally parallel links, each link having a first end and a second end, each link pivotally connected to the actuator block at the first end and pivotally connected to the mounting block at the second end, wherein the plurality of generally parallel links comprises a first link and a second link, the system further comprising a ball bearing joint at the pivotal connection between the first end of the first link and the actuator block;
an actuator motor, operatively connected to one of the plurality of generally parallel links for rotating the one of the plurality of generally parallel links at the first end, the rotation relative to the actuator block;
a torsion spring at the pivotal connection between the second end of the first link and the mounting block;
a torsion spring at the pivotal connection between the first end of the second link and the actuator block; and

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a torsion spring at the pivotal connection between the second end of the second link and the mounting block.